

What is claimed is:

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[c1]

A method for fabricating an integrated optical isolator, comprising:  
depositing a wire grid material on a magneto-optical substrate;  
depositing a resist film on the wire grid material;  
bringing a mold with a wire grid pattern in contact with the resist film and  
compressing the mold and resist film together so as to emboss the wire grid  
pattern in the resist film; and  
transferring the wire grid pattern in the resist film to the wire grid material on the  
magneto-optical substrate by etching.

[c2]

The method of claim 1, wherein the wire grid material comprises a metallic material.

[c3]

The method of claim 1, wherein the wire grid material comprises a dielectric material  
sandwiched between two metallic materials.

[c4]

The method of claim 3, wherein the metallic materials are selected from the group  
consisting of Al, Au, Cu, Ir, Mo, Ni, Os, Pt, Rh, and W.

[c5]

The method of claim 3, wherein the dielectric material is selected from the group  
consisting of Si, SiO<sub>2</sub>, and GaAs.

[c6]

The method of claim 1, wherein the resist film comprises a thermoplastic polymer.

[c7]

The method of claim 6, further comprising heating the mold and the resist film to a  
temperature above the glass transition temperature of the thermoplastic polymer prior  
to bringing the mold in contact with the resist film.

[c8]

The method of claim 1, further comprising coating the magneto-optical substrate with  
an anti-reflective material prior to depositing the wire grid material on the substrate.

[c9]

A method for fabricating a wire grid polarizer, comprising:  
depositing a wire grid material on a substrate, wherein the wire grid material  
comprises a dielectric material sandwiched between two metallic materials;  
depositing a resist film on the wire grid material;

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bringing a mold with a wire grid pattern in contact with the resist film and compressing the mold and resist film together so as to emboss the wire grid pattern in the resist film; and  
transferring the wire grid pattern in the resist film to the wire grid material on the substrate by etching.

- [c10] The method of claim 9, wherein the metallic materials are selected from the group consisting of Al, Au, Cu, Ir, Mo, Ni, Os, Pt, Rh, and W.
- [c11] The method of claim 9, wherein the dielectric material is selected from the group of Si, SiO<sub>2</sub>, and GaAs.
- [c12] The method of claim 9, wherein the resist film comprises a thermoplastic polymer.
- [c13] The method of claim 12, further comprising heating the mold, the resist film and the substrate to a temperature above the glass transition temperature of the thermoplastic polymer prior to contacting the mold with the resist film.
- [c14] The method of claim 9, further comprising applying an anti-reflective coating on the substrate prior to depositing the wire grid material on the substrate.
- [c15] The method of claim 9, wherein the substrate is made of a magneto-optical material
- [c16] An integrated optical isolator, comprising:
  - a magneto-optical substrate having a first surface and a second surface, the first and second surfaces being coated with an anti-reflection material;
  - a first wire grid structure formed on the first surface, the first wire grid structure being adapted to suppress reflection of rejected polarization; and
  - a second wire grid structure formed on the second surface and rotated an angle with respect to the first wire grid structure.
- [c17] The integrated optical isolator of claim 16, wherein the first wire grid structure comprises a plurality of substantially parallel grid elements, each grid element comprising a dielectric material sandwiched between two metallic materials.
- [c18] The integrated optical isolator of claim 17, wherein the metallic materials are selected from the group consisting of Al, Au, Cu, Ir, Mo, Ni, Os, Pt, Rh, and W.

[c19] The integrated optical isolator of claim 17, wherein the dielectric material is selected from the group of Si, SiO<sub>2</sub>, and GaAs.

[c20] A wire grid polarizer, comprising:  
a substrate which is transparent at a selected wavelength; and  
an anti-reflective wire grid structure formed on a surface of the substrate.

[c21] The wire grid polarizer of claim 20, wherein the surface of the substrate on which the anti-reflective wire grid structure is formed is coated with an anti-reflective material.

[c22] The wire grid polarizer of claim 20, wherein the anti-reflective wire grid structure comprises a plurality of substantially parallel grid elements, each grid element comprising a dielectric material sandwiched between two metallic materials.

[c23] The wire grid polarizer of claim 22, wherein the metallic materials are selected from the group consisting of Al, Au, Cu, Ir, Mo, Ni, Os, Pt, Rh, and W.

[c24] The wire grid polarizer of claim 22, wherein the dielectric material is selected from the group of Si, SiO<sub>2</sub>, and GaAs.

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